Infection prevention and control: Marrying practice, policies and procedures through education

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ABSTRACT
This article attempts to prove that education regarding infection prevention and control can integrate practice, policy and procedure if it is based on critical situational analyses (performance reviews), good planning, enthusiastic and knowledgeable facilitators and mentors, as well as sound training methods backed by user-friendly technology and academic rigor. Lastly, managerial support is of utmost importance.

This task may sound daunting, but it has already been done successfully in Mpumalanga. Co-operation between the Provincial health care system and three universities in the RSA and Australia during 1998–2001 has proved that education definitely benefits all involved.

Introduction
Integrating infection prevention and control practice, policies and procedures might sounds relatively easy to do, doesn’t it? After all, these subjects are as closely related as the proverbial triplets “Copy”, “Paste” and “Print”… Sadly, this fact may be one reason why integration is such a problem in some hospitals. What works with no effort on paper may be nearly impossible to implement in clinical practice. The knowledge staff gather during formal or semi-formal lectures may not ever be applied in practice, because the theory and practice are so far removed from one another.

So how do we make management’s conception of high standards of low-cost infection prevention and control measures, resulting in no hospital acquired infections or irate patients possible in our health care settings? The short answer… We can’t, not without motivation, effort, time (and money) from all the participants involved.

This article strives to give some guidance on achieving this aim through training and educating staff in regard to infection prevention and control in the health care setting, and then quotes a successful project that managed to do just that.

Procedure
1. Undertake a thorough situational analysis
A situational analysis will provide a broad concept of what the present situation regarding the incidence of community acquired, health care acquired and hospital acquired infection is in the specific health care setting. This is undertaken on a micro as well as a macro level. A macro situation analysis, for example, would provide a picture of how ongoing globalisation, population development and changing employment patterns are influencing occupational safety and health, as well as the potential for hospital acquired infection to develop in the facility.

One time-tested way of doing such an analysis is by applying a procedure such as the well-known “TOWS” (or “SWOT”) process, a situational analysis framework matrix for identifying and analysing the threats (T) and opportunities (O) in the external environment and assessing the organisation’s weaknesses (W) and strengths (S). This exercise looks at both internal and external factors that influence the organisation, and allows for more goal-orientated strategically planning.

In the situational analysis, some inputs which must be taken into account include the:
1. Needs of patients/clients (e.g. demanding high quality, cost-effective curative services).
2. Employees (looking for high paid, simple jobs in a supportive, safe environment).
3. Suppliers (wanting regular orders without demands or restrictions, and prompt payment of accounts).
4. Health practitioners (expecting up-to-date resources and immediate attention to all requests).
5. Stockholders (anticipating good business practices with regular high yields).
6. Competitors (offering similar services and vying for the same group of patients/clients).
7. Top-management involvement (which can either empower or paralyse infection prevention and control programmes).
8. Levels of health and health care prevalent in the community that uses the health care facility.
9. “Availability” of pathogens prevalent in the population or facility.
10. Policies in place in the facility (e.g. standard infection prevention and control measures implemented for all patients documented, dated, signed, reviewed and accessible).
11. Procedures (e.g. microbiological surveillance, the use of protective clothing, barrier nursing protocols, medical waste handling, isolation of patients with contagious conditions and occupational health/safety practices).
12. General care practices implemented in the facility (e.g. orientation of new staff, supervision of patient care practice, ease of procurement of supplies, training and education of staff and patients).

Ironically, what is a strength can also be a threat to a successful infection prevention and control programme. For example, rigid application of policies can lead to universal and standardised nursing care, but also to costly over-utilisation of resources when staff use full protective clothing to care for a patient diagnosed and perceived to be infectious, irrespective of whether simpler measures could do the job as well.

An important part of the situational analysis is a performance review or audit of the methods of communication and...
Table I: Example of a TOWS matrix for an infection prevention and control programme of a small hospital

<table>
<thead>
<tr>
<th>Threats</th>
<th>Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Cholera in population – many patients tapping into resources</td>
<td>* Cholera in population – many clients requiring beds</td>
</tr>
<tr>
<td>* Only hospital in 50 km radius</td>
<td>* Only hospital in 50 km radius</td>
</tr>
<tr>
<td>* Performance review indicates knowledge/skills gaps regarding caring for patients with cholera</td>
<td>* Developing unique unit-specific training regarding community care for cholera patients to supplement to keep patients out of hospital</td>
</tr>
<tr>
<td>* Small complement of staff on the establishment – no resources in the community if anyone falls ill</td>
<td>* Education of staff and training of care workers</td>
</tr>
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<table>
<thead>
<tr>
<th>Weaknesses</th>
<th>Strengths</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Cholera in population – staff members could succumb</td>
<td>* Dedicated staff, specially trained to care for patients with cholera during disaster management</td>
</tr>
<tr>
<td>* High levels of patients with HIV infection already occupy beds in the hospital, but could also succumb to cholera</td>
<td>* Mentor or facilitator system, willing to provide “by-the-bedside” support for colleagues who work long hours</td>
</tr>
<tr>
<td>* Many single-parent families among staff – sick children might keep staff members home</td>
<td>* Policies and disaster procedures are in place to supplement the normal functioning of the hospital</td>
</tr>
<tr>
<td>* Only hospital in 50 km radius – no facility to refer surplus patients to</td>
<td>* A hospital disaster plan has been developed to allow minimum staff to care for maximum patients</td>
</tr>
<tr>
<td></td>
<td>* A supportive public health (clinic) service exists in the community</td>
</tr>
</tbody>
</table>

training in the facility to identify clinical problems and shortcomings.

2. Identify problems or shortcomings in practice (critical audit)

When the matrix is analysed, the hospital might find that the strengths and threats cancel each other out as shown above, that opportunities exist that no-one has ever taken account of, that weaknesses might just require a small adjustment or fresh new point of view, or some reorganisation of existing resources.

There are certain categories of problems that regularly surface in organisations, some of which include:

- The availability of practical, written policies applied universally.
- The high cost of training staff with time spent away from clinical practice.
- Disruption of essential services, such as withdrawing skilled staff in busy emergency rooms to go for training elsewhere.
- The unavailability of experienced facilitators and appropriate training material.
- A lack of clinical knowledge or practical skills regarding infection prevention and control among nursing staff in general.
- A lack of a coherent team identity, resulting in staff wanting to do ‘their own thing’.
- Irrelevance of training content when compared to the facility’s daily routine and patient profile – theory must be reinforced by day-to-day practice in order to be integrated into a person’s work pattern.4,5

Often, good will, enthusiasm and education are able to reduce or eliminate the problems.

However, some problems cannot be dealt with on grass roots level and might require managerial or even higher intervention:

- Lack of managerial motivation and support.
- Social factors such as negativity regarding some infection prevention and control measures, e.g. sealing an infectious person in plastic body bags after death, thus preventing the family from bathing the deceased as part of the funeral ceremony.
- Political factors such as bad faith spread in the community by health care competitors or unhappy former patients. It is therefore important to analyse problems and decide whether they can be resolved on a local level, or require intervention from another source.6,7

Part of the identification of problems is an intensive scrutiny of policy and procedures.

3. Devise, adjust or enforce policy and procedure

After the scientific analysis and the examination of the types of problems prevalent in the facility, policy has to be formulated and/or reviewed. Policy based on scientific and best evidence practice requires a set aim to indicate the benefit of the written guidelines to the facility. As with all health care documents, the scope of practice of the persons addressed by the policy must be indicated, so that the appropriate staff know to who the policy is applicable. In the case of infection prevention and control, policy is usually applicable to all nursing and other health care staff, the patient, as well as everyone else who has contact with the patient 4.

Policy requires a set of detailed and inclusive procedures that makes it possible to deliver on the promises(s) described by the policy. For example, these procedures may include processes such as isolation of infected patients, depending on which infection is present and the method of its transmission, the accommodation and staffing available. The procedures that accompany a policy cannot cover every contingency, so additional sources of information and literature are included. To ensure that the written document is considered “official”, the statement is allocated a reference number, is dated and signed by management, an applicable timeframe is fixed, and a review date selected. Finally, an electronic or hard copy of the policy and its procedures is placed in an accessible area so that staff can keep themselves informed of its contents.8,9 After
Some other methods to assist learning, communicating and training include:

- Scheduling regular critical audits to assess what can be improved or may be lacking in skill or knowledge in a hospital, if this is added to a less time-consuming method such as providing the staff with what they would like to learn about or gain more knowledge of, better goal orientated learning strategies can be planned.
- Computer contact includes access to the Internet to source information, to complete e-learning (electronic learning) modules or to participate in distance learning programmes. This allows a student to work in any hospital, facilitated by an experienced mentor, and communicate with a centrally placed tutor or nurse educator regarding theoretical work and learning assignments.
- Developing multimedia presentations, combining audio-visual aids such as virtual hospitals, role-play recorded on video, radio, as well as e-learning modules. These are incredibly valuable as colour and sound is more stimulating than black and white words in a book or a static slide presentation, and can be repeated without losing quality or interest.
- Facilitating experiential learning with experienced staff members so that the student can ask work-related questions and receive answers appropriate to the clinical practice, and company policy.
- Scheduling interactive (face-to-face) contact sessions in week- or day-long blocks, allowing staff to concentrate fully on the material to be mastered and practice procedures without the pressure of having to rush back to work.
- Devising creative summative evaluation methods to ensure that an acceptable level of learning has taken place, e.g. interdepartmental quizzes or competitions, rather than the more traditional and stressful written or practical examinations that often only encourage bad learning practices such as cramming.
- Minimising the restructuring of departments and shuffling of staff for a reasonable time frame to ensure that staff do not have to keep adjusting to new departments and can concentrate on applying the work they have learnt.4,5,7

After solutions have been applied, their efficacy in regard to the clinical practice of the nurses, department or hospital's patient care outcomes has to be evaluated. This can be partially done by surveillance of the medical microbiological laboratory results from patient care departments, interviews with patients, as well as a clinical re-audit (e.g. in-hospital inspections, interviews, questionnaires).4,5,7,8

An example of successful capacity building through education can be found in a project run between 1998 and 2001 in Mpuumalanga, South Africa. A training strategy was developed by Mpuumalanga Province and three South African and Australian universities. During the first phase of training, technical aspects of disease prevention and control were presented to health care staff involved in the project. This was followed by management skills and facilitation during the second phase. The whole project was organised with an intensive one week's residential block period, followed by monthly one-day training sessions and workplace application, and evaluated with written examinations and work assignments.4,5

The results of the project were very positive and proved that it is possible to run cost effective programmes of communicable disease control on a large scale. Nurses from Mpuumalanga province who were involved in the training project reported that the programme enhanced their professional and personal confidence, increased work camaraderie and expanded their professional horizons. In turn, the district health system testified that the communicable disease control in the province had improved. Links to up-to-date web-based electronic training materials were devised and remain available for local application and adjustment.5

When the results of the training project were analysed, it was found that a combination of factors contributed to the success:

- The content of the training was highly relevant to all parties concerned.
- Theory and skills were taught during activities which had direct bearing on daily work routines.
- Training was focused on local health care delivery and situations, involving staff who were able to do the work.
- Formal assessment was completed with high academic rigor, awarding successful candidates with endorsed academic credit.
- All the trainers were highly motivated and enthusiastic themselves.
- Local infection prevention and control experts were available to assist in resolving clinical problems.
- There was sufficient support from management for the project.

Summary

If we can pull infection prevention and control theory and practice into line, major training and effective, successful service delivery is possible. In order to know what the knowledge base and shortcomings in the health care setting is, the system and resulting service delivery must be critically reviewed, e.g. by a "TOWS" ("SWOT") analysis (including current practices, policy and procedures); laboratory data incorporated into infection control surveillance; problems formulated as statements that include expected outcomes; policy and procedures adjusted, developed, integrated and or diligently applied; communication and training levels amplified and optimised, and staff empowered by managerial support.

This task may sound daunting, but it has already been done successfully in Mpuumalanga. Co-operation between the Provincial health care system and three universities in the RSA and Australia during 1998–2001 has proved that education definitely can integrate practice, policy and procedure, to the benefit of all involved.

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